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1988

HAZARDOUS WASTE MANAGEMENT
Montana

TECHNICAL SUMMARY REPORT

MONTANA WASTE MINIMIZATION PROJECT

FOR SMALL QUANTITY GENERATORS

Submitted to:

State of Montana
Solid and Hazardous Waste Bureau
Department of Health and Environmental Sciences
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September, 1988

MDHES Contract No. 800329
SAIC Project No. 1-817-00-180-00

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1.0 INTRODUCTION

In 1981, the Montana State Legislature enacted the Montana Hazardous Waste Act (Title 75, Chapter 10). The intent of the Act was to establish safe and effective regulations and control of hazardous wastes in order to protect human health and the environment. In 1983, the Hazardous Waste Management Regulations (Title 16, Chapter 44) were established with special requirements for hazardous waste generated by Small Quantity Generators (ARM 16.44.305). The majority of hazardous waste generators within Montana are designated as Small Quantity Generators (less than 1000 kg per month generation). In November, 1984, Congress approved the Hazardous and Solid Waste Amendments to the Resource Conservation and Recovery Act (RCRA) and directed the Environmental Protection Agency (EPA) to establish requirements to include small quantity generators in the hazardous waste regulatory system. As a result, the Montana Department of Health and Environmental Sciences (MDHES) proceeded with studies statewide to identify the number and location of small quantity generators and determine the nature, quantities and fate of the generated waste.

In 1986, the MDHES's Solid and Hazardous Waste Bureau initiated a survey of Small Quantity Generators. More than 8,000 industries, institutional departments, commercial and agricultural product formulators, and transporters were canvassed to identify the types and quantities of toxic or hazardous materials produced, inventoried or used, and the amounts and disposition of wastes generated from those activities. Based on the results of over 2,000 responses, the survey determined that spent solvents represented the greatest proportion of Montana hazardous waste. The MDHES then initiated a special study of used oil and solvents which generally identified the sources, regulatory status and management alternatives for these materials. The remainder of the hazardous wastes which are not readily recycled, including selected spent solvents and solvent mixtures, were not addressed in the special study.

In response to a 1987 state legislative directive, the MDHES requested contractor assistance to perform waste audits of selected categories of Small Quantity Generators and identify, evaluate and recommend waste minimization/reduction

strategies, source controls and preferred disposal alternatives. MDHES also requested contractor assistance to develop guidance manuals and perform waste management seminars for Small Quantity Generators across the state. These workshops were to assist Small Quantity Generators in understanding the regulations and to provide a forum for the discussion of waste management alternatives.

In addition, MDHES requested a survey and evaluation of the type, range, level, general availability and price of hazardous waste management services currently available to Montana Small Quantity Generators. This evaluation was designed to support an analysis of the need for the MDHES to develop a State-run hazardous waste transfer station.

2.0 FIELD AUDITS AND WORKSHOPS

2.1 METHODOLOGY

The goal of the field audits was to gather information regarding a wide range of businesses over a large geographic area of the state. Information from the audits was to be used in the Small Quantity Generator workshops held in June, 1988 to provide perspective and background knowledge on practices used by Small Quantity Generators. In addition, the field audits were designed to determine what waste services are available to Small Quantity Generators.

From a data base of businesses provided by MDHES, SAIC developed a list of approximately 120 facilities in the following industrial categories:

- Laundries and Dry Cleaners
- Laboratories
- Photographic Services
- Printing Services
- Metal Finishing and Fabricating Services
- Vehicle Maintenance
- Pesticide Application Services
- Wood Treaters

The list of businesses was designed to incorporate geographic locations throughout the state and in both large and small cities and towns to provide the broadest cross-section of the state possible. Once the initial list of facilities was generated, it was sent to MDHES for input and approval. MDHES made modifications to the list, and a final list of 120 businesses was developed. MDHES then mailed an information letter to each of the facilities on the list to inform them of the program and proposed schedule for the audit teams.

Field audit forms were developed (see Appendix A) for use by investigators in the field, so that consistent information would be collected regardless of the composition of the field team. Types of information collected included:

- Business name and address
- Business type and activities
- Years of operation

- Chemical feedstocks used,
- Waste types and volumes generated
- Current and past waste management activities
- Hazardous waste management services used
- Problems with finding hazardous waste management services
- Permits held

Audits were conducted over a three-week period in April, 1988. Field audit teams followed three routes in western, central and eastern Montana. Field audit forms were filled out for each of the facilities visited. While in the field, the audit team discovered that some businesses on the list were no longer operating, or could not be found. In these cases, the investigators interviewed other similar businesses in the area.

2.2 RESULTS AND ANALYSIS

At the end of the three-week audit period, 114 separate facilities had been audited. The list of facilities and interviewees is provided in Appendix B. The facilities audited encompassed the eight industrial categories outlined in Section 2.1 above, as well as furniture refinishing services. During the auditing process, approximately 10 per cent of the businesses were not found or were out of business. In some cases, especially the university laboratories, the person interviewed represented up to 30 different laboratories on a university campus. These were counted as one facility for the purpose of the audits.

2.2.1 Laundries and Dry Cleaners

Eight commercial laundry and dry cleaning businesses were audited. These businesses conduct both detergent-based and solvent-based cleaning operations. The detergent-based cleaning operations do not typically generate wastes which are considered hazardous under EPA or Montana DHES regulations. Washwaters are typically discharged to a sanitary sewer system or, in some cases, to an on-site drain field. Dry cleaners audited all utilize perchloroethylene as the major cleaning solvent in the dry cleaning machines. Depending on the size of the facility and volume of cleaning conducted, the solvent in the machine becomes

spent and requires change-out and replacement or redistillation. Some dry cleaning equipment also includes carbon-adsorption or other types of filtering units to remove contaminants from the solvent; these filters are typically steamed to reclaim solvent, prior to disposal.

Dry cleaning operations audited generate spent perchloroethylene and sludges and filters contaminated with solvent (EPA Waste I.D. F002). About half of the facilities audited have on-site stills with which to regenerate spent perchloroethylene. Most are sending sludges and spent filters to the local landfill; only one facility interviewed was sending sludges to a permitted off-site TSD facility. One facility was simply storing sludges, uncertain how to handle them.

All dry cleaners audited are classed as Conditionally Exempt Small Quantity Generators, based on the type and volume of wastes reportedly generated. As such, they are disposing of sludges and filters legally, assuming the local landfill authorities allow such disposal. None of the facilities interviewed indicated a need for or difficulty finding a service to remove hazardous wastes, although several commented on the cost of such service.

2.2.2 Laboratories

Five clinical and 10 analytical laboratories were audited during the course of this study. The analytical laboratories comprised commercial as well as high school and university facilities. Laboratories generate an extremely wide range of hazardous and non-hazardous wastes, mostly in the form of off-spec and waste laboratory reagents and spent samples. The clinical laboratories generate various types of biological waste materials, in addition to waste reagents and, in some cases, radioactive wastes (Carbon-14, Iodine-125, gamma counter tubes). Off-specification, unused and spent laboratory reagents may include the whole spectrum of EPA Waste Codes of F, P and U listed wastes. No attempt was made during the course of this study to determine which laboratories were generating specific RCRA wastes. In addition to reagents, samples held by laboratories may also be classed as hazardous wastes if they are no longer being stored for a specific purpose (testing or awaiting return shipment). Many laboratories generate small amounts of this type of sample material.

Clinical laboratories audited typically incinerate biological or infectious waste materials. Spent chemical and waste or off-specification reagents are typically discharged through sink drains to the sanitary sewer. All clinical laboratories audited appeared to be Conditionally Exempt Small Quantity Generators. No interviewees expressed a need for hazardous waste management services.

The high school and university laboratories include an extremely wide range of materials and waste management practices. The high school laboratories try to purchase only enough chemicals for the school year; they discharge most spent reagents to the sanitary sewer. The University of Montana and Montana State University systems generate much higher volumes of wastes. Both universities have departments to track and assist in management of wastes from individual laboratories on campus.

Because of the waste management practices utilized by many of the high school laboratories, there was little need expressed for hazardous waste management services, other than for excess or off-specification reagents. The universities audited utilize permitted off-site TSD facilities for transport and disposal of chemicals which cannot be discharged to the sanitary sewer, incinerated or landfilled.

2.2.3 Photographic Services

One X-ray developing laboratory and five commercial photo processing facilities were audited in the course of the study. These facilities utilize commercial photo processing chemicals, all of which are permitted to be discharged to sanitary sewer systems. In addition, these facilities conduct silver recovery operations, recover the silver emulsions from film and in liquids. The silver is then sold for off-site recycling. No other hazardous wastes are generated from these facilities. None of these facilities expressed the need for hazardous waste management facilities; silver recycling is easily commercially available.

2.2.4 Printing Services

Three newspaper publishers and six commercial printing services were audited during the course of this study. The printing processes employed include

letterpress, screen lithography and gravure printing. Although these processes are highly varied, the waste types produced by the printing industry generally include waste inks, solvent contaminated rags, washwaters and waste photoprocessing reagents.

The printing facilities surveyed generally take waste inks to the local landfill, utilize local laundry services for solvent-contaminated rags and discharge washwater and waste photoprocessing chemicals to the sanitary sewer. Waste inks from the printing industry may exhibit the characteristics of EP Toxicity. Some facilities produce their own print-making plates; these facilities generate spent etchant materials, which may be corrosive (EPA Waste I.D. D002). Most facilities appear to be generating very little waste ink; the largest generator reported only 30 pounds per month of waste ink. One printing facility is recycling most inks by filtering and mixing various colors to make black inks for re-use. This practice has minimized the amount of waste ink generated. Drums in which inks are delivered are returned to the supplier for recycling by most of the facilities interviewed.

Based on the reported waste quantities, all facilities audited would be classified as Conditionally Exempt Small Quantity Generators, or Small Quantity Generators. None indicated the need for hazardous waste management services.

2.2.5 Metal Finishing and Fabricating

Two plating facilities and four metal fabrication facilities were audited during the course of this study. Most of the facilities audited included some type of metal cleaning operations, cutting and welding operations and some painting. The two plating facilities audited included a chrome bumper plating operation and a small parts plater. These facilities had, in addition to the above operations, plating baths and rinse waters for various plating operations. Types of wastes generated in these facilities include waste solvents from parts cleaning, waste cutting and lubricating oils from machining of parts, sludges from paints and thinners, metal shavings, and spent plating solutions which contain high levels of dissolved and particulate metals.

The facilities interviewed generally send oil and solvent soaked rags to the local landfill. Spent solvents and solvent sludges are either taken to the local landfill or recycled as much as possible, and the sludges disposed of at the local landfill. Only one of the facilities audited appeared to be a Small Quantity Generator. This facility utilizes a permitted off-site TSD for disposal of sludges and some wastewaters. The other metal fabrication facilities appeared to be Conditionally Exempt Small Quantity Generators, generating less than 100 kg/month of any hazardous wastes. Only one facility indicated a need for and difficulty in finding a hazardous waste transporter or disposal facility, due apparently to the small quantity of wastes accumulated over time.

2.2.6 Vehicle Maintenance

This industrial category comprised the largest category of facilities audited over the course of this study. Included were dealerships with service facilities, commercial and municipal vehicle maintenance services, auto body repair services, heavy equipment (farm and construction) repair service, radiator shops, and aircraft maintenance. Forty-eight facilities were included in the audits.

Regardless of size and ownership of the operations, all vehicle and aircraft maintenance facilities include basic engine and equipment repair. Integral to these operations is the parts cleaning and equipment lubrication, change-out of lubricating oils, engine fluids, and worn parts. The largest volume of waste produced in the maintenance facilities is waste oils. These are typically drummed, often used for home heating fuel, and sometimes sold to a recycler or waste oil hauler. Many shops utilize solvents which are bought under contract and serviced by the contractor supplying the solvent and the parts cleaning unit. If this is not the case, a number of shops buy and reuse solvents until they are no longer effective. At this time, they may be redistilled on site, but in some cases, auditors determined that the spent solvents are being mixed with waste oils and treated as a non-hazardous waste. This may represent a substantial concern with regard to the use of waste oils as home heating fuels or the legal use of waste oils to oil dirt roads in rural portions of the state. Worn parts are either rebuilt, or disposed of at the local landfill if they cannot be recycled as scrap metal.

Solvents utilized in the auto maintenance industry may exhibit the characteristic of ignitable (EPA Waste I.D. D001), or may be a chlorinated compound (EPA Waste I.D. F-0XX). Waste oils are not considered to be a hazardous waste under Federal Law.

Auto body shops and repair facilities that paint vehicles generate spent paint thinners and strippers as well as waste paints, paint sludges and filters. The thinners may be listed or characteristic hazardous wastes; the paints may also be hazardous due to metal content. In general, the shops interviewed reuse thinners as long as possible before wasting them or recycling them. Painting is typically done in some kind of a paint booth where overspray is collected on a filter or in a water curtain system.

Radiator shops typically utilize hot caustic baths for radiator cleaning. This operation generates a metal-rich sludge at the bottom of tanks which must be periodically cleaned out. In addition, the caustic in the hot tanks must be periodically changed out. Audits conducted on these facilities revealed that sludges are handled in one of several ways: pumped out by a septic hauler and disposed off-site at unknown locations, pumped out and disposed on the property, flushed to the sanitary sewer, flushed to an on-site septic tank, or taken to the local landfill. The caustic liquid is generally neutralized and discharged to the sanitary sewer, if and when it is changed out.

Few if any of the vehicle maintenance facilities audited can be classified as any other than Conditionally Exempt Small Quantity Generators. Most facilities generate a large volume (several hundred gallons per year) of waste oils; if solvents are mixed with these oils such that the mixture is a hazardous waste, then the entire volume would be a hazardous waste. Currently, most facilities are not testing waste oil/solvent mixtures to determine if they are hazardous prior to selling or re-using these waste materials.

Few of the facilities audited indicated a need for hazardous waste transportation and management services, other than a need for some type of solvent recycling. Safety-Kleen is available in western Montana to provide this service; in the

Waste oils often mixed with solvents.

eastern portion of the state facilities do not have this or any other solvent recycling service available to them.

2.2.7 Pesticide Services — successful program.

Three types of pesticide services were evaluated in the course of this study: aerial applicators (five facilities), county weed control districts (four facilities), and elevators/co-ops (six facilities). The County Weed Control District and the elevator and co-op businesses are involved in ground application of pesticides, fumigation of seed crops, and rental of ground application equipment.

The aerial applicators are seasonally-based operations serving farmers by applying herbicides and insecticides for crop control. They typically operate from a local airport, where they mix formulations, and rinse equipment. Most aerial applicators interviewed indicated that they attempt to recycle all rinsewaters for use as make-up water for additional formulations. If the same formulation is not being used again immediately, rinsewaters may be stored in drums or tanks and reused when needed.

County weed districts, which are involved in both weed and mosquito control on public roads in the state, have similar mixing and rinsing operations. Some weed districts are also licensed to sell pesticides to individuals, and often have a designated storage area for product, off-specification and waste pesticides.

Grain elevators and co-ops stone, clean, and treat seed. Fumigants are commonly used in these operations to control smut and rot, as well as insect and rodent control. Fumigants released in these situations are typically used up by the process, generating no waste. Co-ops may rent ground application equipment to farmers. In some cases, the rental equipment is cleaned on-site, generating contaminated wastewater. This wastewater is sometimes discharged to the ground, or an unlined lagoon, and occasionally to tanks or lined impoundments. ✓ pot. prob.

Empty pesticide containers are also generated as a waste in all of these operations. Some triple-rinsed containers (holding P-wastes) may be disposed

of at a municipal landfill. Container liners and containers which are not triple-rinsed may be hazardous wastes. Few facilities indicated that they generated this type of waste.

All pesticide services interviewed appeared to be Conditionally Exempt Small Quantity Generators, based on reported types and quantities of waste reported. None of these businesses indicated a need for hazardous waste transportation or management services, because of the prevalence of recycling of rinsewaters and the triple-rinsed container disposal.

2.2.8 Wood Treaters

Four wood treating facilities in western and central Montana were audited. These facilities all treated poles using a pentachlorophenol (penta) and oil mixture. The treatment process utilized includes mixing and heating the oil and then dipping the poles for a specified length of time in the mixture. Poles are then dried over the tanks and placed in a yard for storage. Wastes generated include sludges in the bottom of the treatment vessels, water accumulating from rainwater in the vessels, and penta-oil mixtures which are no longer of appropriate strength to treat wood. In most cases, treatment tanks are cleaned out once or twice a year, and sludges are either stored on-site, shipped to a permitted hazardous waste off-site storage facility or, in one case, burned on-site.

Wood treaters are included under RCRA regulations if they generate sludges from wastewater treatment (EPA Waste I.D. K001), or if they discard unused formulations of pentachlorophenol (EPA I.D. F027). Based on the types and volumes of wastes reported during the survey, the wood treaters audited would be classified as Conditionally Exempt Small Quantity Generators, subject to few of the RCRA regulations.

The small sample size of wood treaters did not allow good comparison of the need for hazardous waste services. One treater has shipped wastes to a permitted TSD; two others indicated that they have had a difficult time finding a facility which would take penta, and the fourth indicated no need for such a service, as he had not generated waste.

2.2.9 Generator Workshops

Following the field audits, RCRA compliance manuals to be used in generator worshops, were developed for each of the major industrial categories audited. Manuals were completed for the following industrial types:

- Laundries and Dry Cleaners
- Laboratories
- Photographic Services
- Printing Services
- Metal Finishing and Fabricating Services
- Vehicle Maintenance
- Pesticide Application Services
- Wood Treaters

Workshops, sponsored by the Montana DHES and the State Chamber of Commerce, were then held in 11 cities across the state (Figure 1). Two workshops were held in Billings to accommodate the expected large number of participants. A total of 348 people attended the workshops statewide. Interest was greatest in the smaller communities, where hazardous waste management information is not as readily available as in Billings and some of the larger communities. Attendance was sparse in some industry categories, based on lack of geopgraphic presence of those industrial types. Interest in waste minimization was great, especially in the auto maintenance area, with solvent recycling and waste oil disposal frequent topics of discussion.

The workshops revealed that pesticide applicators, dry cleaners and photographic services are already utilizing waste minimization techniques which essentially eliminate waste generation. Pesticide applicators are re-using equipment rinseate in new formulations, and triple rinsing pesticide containers prior to disposal in municipal landfills. Dry cleaners with moderately new equipment or retrofitted equipment are utilizing solvent stills to clean filters, and reuse solvents over a long period of time, generating only occasional solvent still bottoms which are in quantities which are not currently regulated. Photographic services typically use chemical baths which are safe to discharge to the sanitary

sewer. Waste silver generated in these operations is quite commonly being reclaimed and shipped to silver recyclers out of state.

FIGURE 1

CITIES IN WHICH SMALL QUANTITY GENERATOR WORKSHOPS
WERE CONDUCTED IN JUNE, 1988

3.0 HAZARDOUS WASTE MANAGEMENT SERVICES IN MONTANA

3.1 METHODOLOGY

In order to assess the current availability of hazardous waste transportation and disposal services in Montana, a list of 42 companies was compiled from hazardous waste services directories. Effort was made to include local and national firms transporting, landfilling, and incinerating hazardous wastes, as well as a number of local oily waste haulers and recycling companies to determine what type of services were offered. Corporate information was solicited from each firm contacted. A contact report was developed for the interviewer so that consistent information could be gathered from all firms. Initially, information was solicited in the following categories:

- Waste Types: Oily wastes, solvents, sludges, and other (to include pesticides and cyanides)
- Waste containers: Drummed wastes only, no bulk liquids or bulk solids
- Container Quantities: One, 15 and 50 (full truck loads)
- Cities for Pick-up Points: Billings, Glasgow, Missoula, Helena.

Following the initial contacts, it was determined that most companies would not give information in this level of detail or did not break pricing information down in this manner.

In addition to contacting various waste handling facilities, large quantity generators in the Billings area were contacted to identify their hazardous waste management practices and to determine whether any might be willing to serve as an off-site storage facility for small quantity generators elsewhere in the state. An interview was conducted with Special Resource Management in Butte to determine their current range of service and plans for future operations within the state. In addition to these formal interviews, information was solicited from generators during audits to determine what, if any, services they were using.

3.2 RESULTS

Service is avail. to the entire state.

Of the 42 companies originally listed, 33 were successfully contacted. A list of these facilities is shown in Appendix C. Of these 33, 17 are currently serving generators in the state of Montana. Information regarding the companies currently in the state are shown in Tables 1 and 2. Special Resource Management, located in Butte, is the only hazardous waste services company with offices local to the state; other companies, however, serve both large and small quantity generators from various locations outside Montana. Three used oil services were identified during this survey, all serving overlapping portions of the state.

$30 - $600/drum plus. trans. costs

3.2.1 Wastes Managed

No quantity discts.

A number of hazardous waste management firms contacted take a full range of materials. The most common waste exclusions include explosives, hospital wastes, and radioactive materials. Many companies will not accept dioxin-contaminated wastes, largely because no facilities in the U.S. are currently permitted for landfilling or incinerating this waste type. All companies contacted require some type of waste profile, prior to accepting hazardous wastes from generators.

3.2.2 Costs

Few companies would provide specific cost information without knowing the exact waste type. General ranges of costs, where available, are shown on a per drum basis in Table 1. Most companies provided a general range of costs per drum based on the type of material and cost of ultimate disposal. In general, non-chlorinated solvents and 1 - 5 percent corrosives with no metals present are the least expensive, and strong corrosives with metals, chlorinated solvents, and acute hazardous wastes are the most expensive. Regulations require that waste profiles be available for the manifesting of wastes; example profile sheets required by two of the companies contacted are shown in Figures 2 and 3. Many hazardous waste services firms reserve the right to or require that the generator sample and analyze the waste to be transported to determine its hazardous properties prior to manifesting and shipping. Companies contacted during the course of the survey indicated for the most part that transportation rates could be calculated on a regular freight basis based on distance to be transported and volume transported. All companies contacted indicated that they would be willing

Battery recycling has shut down.

TABLE 1

HAZARDOUS WASTE MANAGEMENT COMPANIES
SERVING MONTANA

Company	Wastes	Costs Per Drum	Comment
American Environmental Management Rancho Cordova, CA	No exclusions	$200-300 without transport	Will serve SQGs- Treater, transporter, recycler
Chemical Waste Management Portland, OR	No dioxin	$77 (solids)- $515	Transporter, disposal facility, incineration
Envirosafe Services of Idaho Boise, ID	No metal sludges, solvent, DDT or >200 ppm free CN	Would not supply over phone	Costs depend on both quantity and distance; Transporter, disposal facility
North American Environmental, Inc. Tacoma, WA	No radioactive or medical wastes	$30 (if recycled) to $800 (if incinerated)	Transporter, recycler
Pegasus Waste Management Wilsonville, OR	No exclusions	Would not supply over phone	Specializes in milk runs for SQGs; transporter
Reidel Environmental Services Deer Park, TX	No explosives, radioactive waste, or dioxin	$222-425 without transport	Transporter; would like to include Montana in West Coast milk run
SCA Chemical Services Chicago, IL	No pressurized containers, dioxin, explosives, hospital wastes or shock sensitive materials	$93-515 ($800 minimum for pickup)	No volume discounts; incinerator

TABLE 1

HAZARDOUS WASTE TRANSPORTERS
SERVING MONTANA

Company	Wastes	Costs Per Drum	Comment
Sierra Chemical Co. Reno, NV	No liquid cyanide	$297-400, including transport	Transporter; doesn't want small quantities discounts for full load
Western Compliance Services, Inc. Tualatin, OR	No exceptions	$160-600	Transporter; now operating in western Montana
Special Resource Management Butte, MT	No radioactive or explosive wastes		Serves entire state; Transporter
Chemical Processors, Inc. Seattle, WA	No 2, 4, 5-T	$75-600, depending if recyclable	Transporter, treater; high transportation rates to Montana-discount for full truckload
Safety-Kleen Boise, ID	Solvents	Not available	Transporter, recycler
U.S. Pollution Control, Inc. Lake Point, UT	No radioactive wastes, hospital wastes, restrictions	One drum $400; full truck $225-250/drum, including transport	Has SGC-program in Utah; Transporter, disposal facility
Sol-Kleen, Inc. Rathdrum, ID	Waste lacquer thinners, other solvents	Not available	Transporter; hauls to Technisol, Inc. in Raymond, Alberta

TABLE 2

USED OIL SERVICES IN MONTANA

Company	Comment
A & B Used Oil Service Billings, MT	Pumps waste oil; sent to Wyoming for recycle or disposal
H & M Oil Company Pocatello, ID	Hauls in Bozeman, Dillon, Butte and Billings. Pumps oil from drums/tanks to truck for recycle/resale
Montana Oil Service Great Falls, MT	Pumps oil from drums/tanks to truck for recycling in Canada. 25 cents per gallon; 2,000 gallon minimum
Area Pump & Re-Cyk Waste Oil Specialists Glendive, MT	Hauls in eastern Montana; most oils go to asphalt batch plant
Jerry's Waste Oil Service Milltown, MT	Hauls in Missoula area and other western Montana locations. Pumps oil from drums/tanks

FIGURE 2

EXAMPLE WASTE PROFILE SHEET

MATERIALS CHARACTERIZATION DATA SHEET

MCDS Document # _____

MSP CODE: _____

Generator Name _____
Facility Address _____
City, State, Zip _____
Technical Contact _____
Title _____
Telephone NO (_____)_____ EXT. _____
Facility EPA ID # _____

Bill To: _____
Address. _____
City, State, Zip: _____
Telephone #: _____
Company Contact _____
Container Size: _____
EPA Waste No _____
Generating Process _____
Common Name of Waste _____
Rate of Generation _____ _____ PER _____
(Quan. (Units (Time Interval)
Volume in Storage _____ IN _____
(Quan. (Units (Container Size and Type)

CHEMICAL COMPOSITION (No Trade Name)

(Totals must add up to 100%)

_____ _____ %
_____ _____ %
_____ _____ %
_____ _____ %
_____ _____ %
_____ _____ %
_____ _____ %

Is Waste DOT Hazardous [ ] YES [ ] NO
Proper DOT Shipping Name _____
Hazard Class _____ ID No. _____
Transportation Equipment _____
Placarding _____

METALS (EP Toxicity Test, mg/1)

Arsenic (As)	_____	Silver (Ag)	_____
Barium (Ba)	_____	Copper (Cu)	_____
Cadmium (Cd)	_____	Nickel (Ni)	_____
Chromium (cr)	_____	Zinc (Zn)	_____
Lead (Pb)	_____	_____	_____
Mercury (Hg)	_____	_____	_____
Selenium (Se)	_____	_____	_____

INORGANICS (mg/1 or ppm)

Total CN	_____	Iodine	_____
Free CN	_____	Asbestos	_____
Sulfide	_____	_____	_____
Chloride	_____	_____	_____
Bisulfite	_____	_____	_____
Sulfite	_____	_____	_____
Sulfate	_____	_____	_____
Phosphate	_____	_____	_____
Fluorine	_____	_____	_____
Bromine	_____	_____	_____
Chlorine	_____	_____	_____

ORGANICS (mg/1 or ppm)

Endrin	_____	Organohalide	_____
Methoxychlor	_____	Mercaptans	_____
Toxaphene	_____	_____	_____
2, 4-D	_____	_____	_____
2,4,5-T	_____	_____	_____
Phenolic(s)	_____	_____	_____
PCBs	_____	_____	_____
Dioxin	_____	_____	_____
TOC	_____	_____	_____

PHYSICAL DESCRIPTION

Physical State [ ] Liquid [ ] Semi-solid [ ] Solid
Phases/Layering [ ] Uni-Layer [ ] Bilayer [ ] Multilayer
Viscosity [ ] High [ ] Medium [ ] Low
Type of Solids [ ] Organic [ ] Inorganic [ ] Mixed
Total Solids (wt. %) _____ Suspended Solids (wt. %) _____
BTU/lb _____ % Ash Content _____% Water (by weight) _____
Flash Point (°F) _____ Type _____
Specific Gravity _____
Boiling Point, (°C) _____ Freezing Point, (°C) _____
Vapor Pressure (mm Hg @ 24°C) _____
pH (Avg) _____ (Range) _____ to _____
Total Alkalinity/Acidity (%) _____
Odor _____
Color _____

HAZARDOUS PROPERTIES

[ ] NONE
[ ] Water Reactive [ ] Reactive [ ] Explosive
[ ] Shock Sensitive [ ] Pyrophoric [ ] Polymerizable
[ ] Radioactive [ ] Pesticide Residuals [ ] Ignitable
[ ] Corrosive [ ] Toxic Vapor [ ] Pathogen
[ ] Biological [ ] Etiological
[ ] Other _____

REQUIRED PERSONNEL PROTECTIVE EQUIPMENT AND PROCEDURES: _____

_____
_____
_____
_____

PLEASE ATTACH ALL MATERIAL SAFETY DATA SHEETS, LOGISTIC SKETCHES, ANALYSIS REPORTS, HANDLING PRECAUTIONS, ADDITIONAL HAZARD SUPPORT INFORMATION, DATA & COMMENTS.

CERTIFICATION: I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omission of composition or properties exists, and that all known or suspected hazards have been disclosed. I certify that the materials tested are representative of all the materials subject to the contract.

DATE _____ GENERATOR'S SIGNATURE: _____

MSP FORM 1040 (REV. FEB/88)

FIGURE 3

EXAMPLE WASTE PROFILE SHEET

Waste Profile Information

I. General Information WPI # _____

_____ _____
Company Name Generator EPA ID # Status: Large > 220 #/Mo.__
Small 220-2200#/Mo.__
_____ _____ NonGenerator <220#/Mo.__
Address P.O. Box

_____ _____ _____ _____
City State Zip Technical Contact Phone

_____ _____
Business Contact Phone

II. Waste Product Description & Characteristics
A. Waste Product Common Name _____
1. Process Generating Waste _____
2. Material Safety Data Sheet (MSDS) or analysis available __Yes __No Are they submitted:__Y__N
B. Hazardous Properties:
1. U.S. EPA Hazardous Material? ___Yes ___No 2. U.S. EPA Hazardous Code(s) _____ _____

C. Physical Properties at 70° 1. Physical State: 2. Layers: __Multilayered 3. Flash Point (Closed Cup)
__Solid __Powder __Bi-Layered __70°F __140-200
__Liquid __Sludge __Homogenous __70-100 __No Flash
4. Ph. ___ 5. Debris in Waste? __Yes __No __101-130 __Exact

III. Solvent Information
A. Are solvents Present? __Yes __No B. Are the solvents chlorinated? __Yes__No
C. What is the percentage of solids present?___% D. How is the material packaged presently?__Dm__T
E. What is the % of water in the material?_____% F. Is there BTU value to this material? __Yes __No

IV. PCB Information:
A. Are Polychlorinated Biphenyls Present? __Yes __No B. If yes, please fill out PCB Control Sheet.
C. Laboratory Analysis available? __Yes __No

V. Chemical Composition (100%) Range Metals(PPM) Reactives & Other Wastes(PPM)

_____	_____%	Arsenic (As)____	Lead(Pb)____	Cyanides____
_____	_____%	Barium(Ba)____	Selenium(Sa)___	Sulfides____
_____	_____%	Cadmium(Cd)____	Silver(Ag)____	Dioxin____
_____	_____%	Mercury(Hg)____	Non present____	Other____
				Non present ____

VI. Projected Volume: ___Tons ___Gallons ___Cubic yards ___Drums ___Other
Per: ___One Time ___Week ___Month ___Quarter ___Year

VII. Sample and Analysis:
On behalf of _____(Co.name), I hereby authorize , to sample the above described material and further obligate said company to pay all appropriate charges connected therewith not to exceed $_____.

VIII. Signature:

_____ _____ _____
Name Title Date

to pick up wastes almost anywhere in the state, so long as transportation costs were covered. For the generator in remote locations, this may mean very high rates on a cost per drum basis. Nonetheless, it indicates that although portions of the state may not currently be served, services are available.

3.2.3 Service Areas

No areas of the state could be identified during the survey which currently have no hazardous waste services available to them. All companies contacted indicated that they would be willing to go anywhere in the state for pick-ups, so long as they could cover transportation costs. Because of the presence of large quantity generators in the Billings area, many more companies are familiar with and enter Montana via this route. Hazardous waste services companies with offices in Montana face the same problems as companies based outside the state. Special Resource Management does not have treatment or disposal facilities, and thus is brokering these services for generators, while serving as a transfer station at its facility in Butte. Most other companies contacted are providing the same type of service, with the notable exceptions of Envirosafe, Chemical Waste Management and U.S. Pollution Control Inc. Safety-Kleen, which serves the area west of the Rocky Mountains, indicated that high transportation costs prevented them from serving areas in eastern Montana. Safety-Kleen does not have an office in Montana; the nearest branch office is in Boise, Idaho.

Many of the waste oil haulers contacted, or discovered during the audits indicated that they served only local or regional areas of the state. In the Billings area, some recyclers take used oil to the refineries for re-refining. Waste paint and lacquer thinners on the other hand are being hauled by a company called Solkleen, Inc. in Rathdrum, ID, who transports drummed waste to a solvent recycler in Alberta, Canada.

3.2.4 Services Identified By Generators

During the waste audits, a number of hazardous and non-hazardous waste management services were identified by the generators interviewed. These services are listed in Table 3. As can be seen from the table, a wide variety of services are used in the state. Hazardous waste management services, such as SRM, serve

TABLE 3

WASTE MANAGEMENT SERVICES
IDENTIFIED DURING FACILITY AUDITS

Hazardous Waste Services

Special Resource Management (10 times) - Butte, MT
Chemical Processors - Seattle, WA
Envirosafe Services of Idaho - Boise, ID
Safety Kleen (8 times) - Boise, ID; Spokane, WA
Oil & Solvent Process Company (2 times) - Colorado
Pegasus Waste Management - Wilsonville, OR
Solkleen (4 times) - Rathdrum, ID
BFI - Odessa, TX

Waste Oil Haulers

Lyman (5 times)
P & B Used Oil Services - Billings, MT
Ja-Lo Oil & Glycol Recyclers - Sheraton, WY
Cascade Septic Service - Great Falls, MT
Jerry's Oil (3 times) - Missoula, MT
Montana Oil
Unknown Canadian Oil Recycler
A-B Used Oil Service
Ron's Oil

Hot Tank Waste Haulers

Pete's Septic - Great Falls, MT

Waste Lead-Acid Battery Recyclers

Pacific Hide & Fur (2 times)
National Battery
Bargain Battery - Billings
Weissman's

Other

Silver Recovery Associates - Longmont, CO
Montana Hazardous Waste Exchange

generators across the state. Others operate only in specific parts of the state. Other services were not identified often enough to determine a geographic distribution of services.

Septic haulers, waste oil haulers, and battery recyclers appear to be more regionally oriented. Local septic haulers were identified as being the most common way to dispose of sludges from hot tanks (corrosive, heavy metals) in radiator shops. Waste oil haulers also appear to be largely local operations, which utilize a variety of methods to dispose of oil collected from generators. Most generators interviewed indicated that they are now paying to have waste oil taken away, a reversal of the situation common in the early 1980's. Waste oil haulers are known to recycle the oil, sell it for boiler or home heating fuel, and oil roads with it. Given the potential for the oil to be mixed with solvents, the latter two options are not particularly desireable. Battery recyclers were also mentioned by a number of the auto maintenance shops. All shops audited stored batteries without draining them prior to recycling. According to the Montana DHES, almost all the battery recyclers in the state are shutting down, due to the economic climate. Therefore, many shops will no longer have an in-state recycler available to them.

A large number of the auto maintenance facilities visited in western Montana utilize Safety Kleen services for solvent use and recycling. This service provides an economical method of using solvents where the company provides the solvent bath equipment and the solvent, and services it on a periodic basis. Many generators in the eastern half of the state expressed interest in this service. Safety Kleen personnel indicated during the course of this study that transportation costs currently prevented them from serving the eastern half of the state. The Boise branch office of Safety Kleen serves the western portion. Safety Kleen services were also identified in Bismark, North Dakota which services eastern portions of the states, as far west as Miles City.

3.2.5 Large Quantity Generator Surveys

Five large quantity generators in the Billings area were interviewed to determine what services they were utilizing and to determine whether any would be willing to serve as a transfer station for Small Quantity Generator waste materials. Wastes being shipped off-site by these generators are being transported to Chemical Waste Management facilities in Oregon and Colorado, Rollins in Texas, U.S. Pollution Control Inc. in Utah, and via Special Resource Management to one of the above-mentioned facilities. Companies interviewed indicated that they would not be willing to serve as a transfer station for Small Quantity Generator wastes due to the liability involved, inconvenience and the cost of preparing a RCRA Part B permit application for those services.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Small Quantity Generator audits, RCRA compliance/waste minimization workshops, and hazardous waste services surveys were performed to determine how wastes are being generated and disposed of in Montana, and what services are available to handle those wastes. The following conclusions have been drawn from this study:

- Of 114 Small Quantity Generator audits conducted, at least 90 percent proved to be Conditionally Exempt Generators (CEGs), generating less than 100 kg per month of listed or characteristic hazardous waste. These Conditionally Exempt Generators are not subject to most of the regulations for waste management and disposal under RCRA.

- Hazardous wastes generated by many SQGs and CEGs are being disposed by one of the following methods: disposal in the local landfill or on-site in burn pits or burial pits; discharged to the sanitary sewer or to an on-site septic tank and drain field; recycled by redistillation on-site; disposed off-site by regulated transporter. Disposal of hazardous wastes in local landfills appears to be a potential problem which is not currently well defined. Removal of hot tank wastes by septic haulers was also identified as a potential problem because this waste stream may contain high concentrations of heavy metals.

- Waste oils and solvents were the largest volume of wastes identified during the generator surveys. This corroborates the results of a special solvent and used oil study conducted for DHES in 1987. The most common method identified for solvent disposal in this study was to mix solvents with waste oils and utilize the mixture for fuel for home or business, or sell to an oil recycling operation. Waste oils which may or may not be mixed with solvents are also used for road oiling in various parts of the state.

- Most generators interviewed <u>did not</u> indicate a need or desire for hazardous waste management services beyond those already available to them. It is likely that the reason for this is the high number of CEGs interviewed who

are currently exempt from most of the regulations. Those generators who were concerned about the availability of such services indicated the need for solvent disposal and, in one case, for plating waste disposal. A much larger number of generators indicated a desire for on-site recycling stills and other waste minimization techniques.

- Hazardous waste services surveyed indicated 17 companies currently serving the state, with only one company having offices in the state. Several companies are already serving SQGs on milk runs through the state, en route to ultimate disposal facilities. Most companies interviewed indicated that transportation costs are the most important factor in determining service areas. All companies indicated that they would be interested in serving generators in Montana if transportation costs could be covered.

- Companies that provide ultimate disposal of wastes in addition to transportation services may be better suited to provided SQG services more economically than those that do not. Those companies which do not have disposal/treatment facilities must pay to transport wastes to disposal facilities, as well as needing to have some type of on-site storage facility (possibly less than 10 day storage). Companies serving primarily SQGs may be required to have permitted storage facilities (greater than 10 days) in order to economically transport wastes to off-site disposal facilities. The economic trade-offs of additional requirements for a RCRA Part B permit associated with siting a commercial off-site facility were not examined during this study.

- No large quantity generators interviewed during this study were willing to serve as storage facilities for SQG wastes from off-site. Reasons cited indicated that liability, inconvenience and additional cost for running such a facility were important in this decision.

Based on the conclusions cited above, it is apparent that a two-fold problem exists in the state. First, many of the Small Quantity Generators located throughout the state are Conditionally Exempt Generators, who are not subject

to many of the RCRA regulations, and who may not be aware of the need for or desirability of waste management services. Secondly, while hazardous waste management services exist in the state, there is a definite problem of profitably serving many portions of the state due to high transportation costs. No single transfer station or service appears to be the solution to either of these problems. As a result, it is not recommended that the DHES provide these services. Instead, the following recommendations are made:

- Efforts should be made by the Montana DHES to educate SQGs and Conditionally Exempt Generators regarding waste minimization techniques specific to the various industries in the state. This could include a periodic state-wide direct mail newsletter or periodic workshops for specific types of generators. Coordination with the Montana Waste Information Exchange may be a way to disseminate some of this type of information.

- The DHES should provide to generators, via direct mail, information regarding those hazardous waste service companies active in the state. No endorsement would be implied if this list is comprehensive. The existing lists available upon request from the DHES should be updated periodically, and expanded to include an annotated description of the companies; these could then be utilized for direct mail to all Small Quantity and Conditionally Exempt Generators identified within the state.

- Parallel with educational activities regarding waste minimization, it appears that additional efforts are required to prevent the improper disposal of waste oil/solvent mixtures. This should be a two-pronged effort: one aimed at requiring testing of waste oils prior to pick-up by oil recyclers and the other at providing information to solvent users regarding on-site distillation. The DHES should encourage the shared use of a single distillation apparatus by several generators in a community. Again, this is part of an educational process, which may require demonstrations of such equipment in various localities and an information bulletin regarding the different types of distillation units available.

- Additional investigation of the practice of using septic haulers for hot tank waste disposal appears warranted. This investigation should focus on the volume of wastes handled in this manner and the ultimate disposal of hot tank wastes by septic haulers to determine whether this practice is environmentally sound.

APPENDIX A

EXAMPLE OF FIELD AUDIT FORM

FIELD AUDIT INFORMATION

FACILITY NAME: _____ DATE OF AUDIT: _____

ADDRESS: _____

_____

INTERVIEWEE NAME: _____ TITLE: _____

BUSINESS TYPE AND MAJOR ACTIVITIES: _____

_____

_____

YEARS IN OPERATION: _____

CHEMICAL FEED STOCKS USED: _____

_____

_____

_____

WASTES GENERATED:	Waste 1	Waste 2	Waste 3
WASTE TYPE (Wastewater, Sludges, Waste Oil, Spent Solvent, etc.)			
WASTE QUANTITIES/ RATES OF PRO-DUCTION (#/Mo., GPD, etc.)			
WASTE CHARAC-TERISTICS (Acidic, Caustic, Heavy Metals, Ignitable, etc.)			

COMMENTS: _____

_____

_____

_____

_____

CURRENT WASTE MANAGEMENT PRACTICES	Waste 1	Waste 2	Waste 3
Onsite Treatment			
Onsite Recycling			
Onsite Storage			
Onsite Disposal			
Off-site Treatment			
Off-site Disposal			
Sewer Discharge			
Other			
Other			

PAST WASTE MANAGEMENT ACTIVITIES (if different from above):_____

_____

_____

WASTE MINIMIZATION PRACTICES (if any):_____

_____

_____

WASTE SEGREGATION PRACTICES:_____

_____

_____

_____

HAZARDOUS WASTE MANAGEMENT SERVICES USED:

NAME: _____

ADDRESS: _____

_____

TYPE OF SERVICE (store, treat, transport, dispose):_____

_____

PROBLEMS WITH FINDING OR OBTAINING HW MANAGEMENT SERVICES: (problems due to economics, availability, etc.):_____

RECORDKEEPING PRACTICES:_____

PERMITS HELD (air, sewer, NPDES, disposal, other):_____

_____

APPENDIX B

SUMMARY LIST OF FACILITIES AUDITED IN APRIL, 1988

SMALL QUANTITY GENERATOR AUDIT SUMMARY

Facility Name/ Address	Business Type	Date Interviewed	Interviewee
WOOD TREATERS			
Belgrade Post & Pole P.O. Box 169 Belgrade	Wood treater/ fabrication	4/20/88	J. Jakovac
Kalispell Pole & Timber Flathead Dr. Kalispell	Wood treater	4/7/88	D. Pelton
Larry's Pole & Timber Hwy. 206 Columbia Falls	Wood treater	4/8/88	B. Cluka
Marks-Miller Post & Pole Co. P.O. Box 125 Clancy	Manuf. wood fence posts & treating	4/15/88	D. Miller
LABS			
C & A Dental Lab 1704 9th Ave. S. Great Falls	Fabricate complete & partial dentures	4/15/88	C. Martin
Custer County High School Miles City	Various educational labs	4/18/88	T. Walt
Energy Laboratories 1107 S. Broadway Billings	Analytical laboratory- water, soil	4/19/88	J. Standish
Flathead High School 644 4th Ave. W. Kalispell	High School chemistry lab	4/7/88	G. Freebury
Fort Benton Senior High School	Senior High School 1 chemistry, 1 biology lab, auto mechanic shop, wood shop	4/12/88	D. Meissner
Lyndes Environ. Labs 133 Hemlock Dr. Billings	Environmental lab	4/22/88	J. Lyndes

SMALL QUANTITY GENERATOR AUDIT SUMMARY

Facility Name/ Address	Business Type	Date Interviewed	Interviewee
Medical Arts Lab 210 Sunny View Lane Kalispell	Clinical lab-blood, urine, cultures-diagnostic lab	4/7/88	M. Best
Medical Lab Services 300 N. Willson Suite 1001 Bozeman	Clinical lab-blood urine, cultures	4/20/88	J. Locke
Medical Reference Laboratories 1145 N. 29th St. Suite 10-B Billings	Clinical lab	4/22/88	M. Waterman
Montana State University Agricultural Experiment Station Hwy. 35 Kalispell	Agricultural research-herbicide research concerning crop - crop & crop production practice	4/7/88	T. Keener
Montana State University Hazardous Waste Facility Bozeman	Variety of university labs	4/20/88	P. Griffin
Northern Engineering & Testing 600 S. 25th St. Billings	Physical laboratory	4/19/88	K. Smit
State Forensic Lab 544 W. Broadway Missoula	Crime lab-analysis of physical and biological evidence of crime scene investigation	4/15/88	A. Melnikov
University of Montana Missoula	37 laboratories on campus	4/6/88	T. Reed
Westside Laboratory (Pathology Lab, Inc.) 401 S. Alabama Butte	Clinical diagnostic lab-tissue analysis	4/4/88	H. McGaffey

SMALL QUANTITY GENERATOR AUDIT SUMMARY

Facility Name/ Address	Business Type	Date Interviewed	Interviewee
RADIATOR REPAIR			
Gallatin Radiator Service 7 Vilard St. Bozeman	Radiator repair	4/20/88	S. Johnson
Haws Automotive & Radiator Service 1407 E. Main Billings	Auto repair, radiator repair	4/22/88	B. Haws
Hodge Radiator 103 Main St. S.W. Ronan	Radiator repair	4/6/88	F. Brown
Jerry's Radiator Service 601 7th Ave. S. Great Falls	Auto repair and industrial repair of radiators	4/12/88	A. Bimler
Joe's Radiator Shop 2 9th Ave. W. Kaispell	Radiator repair	4/7/88	J. Kaufman
Staack's Radiator 1834 Utah Ave. Butte	Radiator shop	4/4/88	E. Staack
Val's Radiator Service 925 3rd Ave. Billings	Radiator repair	4/19/88	D. Doll
AUTO & TRUCK REPAIR			
A & S Trucking, Inc. (West's Best Freight System, Inc.) 1501 Rodgers Missoula	Trucking-truck repair	4/5/88	J. Cox
Aamco Transmissions 2110 W. Broadway Missoula	Transmission rebuild	4/5/88	P. Bray

SMALL QUANTITY GENERATOR AUDIT SUMMARY

Facility Name/ Address	Business Type	Date Interviewed	Interviewee
Big Rig Truck & Repair Lockwood Rd. Billings	Truck repair	4/22/88	R. Bekuld
Bob Kem Auto Repair Columbus	Auto repair	4/21/88	R. Kem
City Chevrolet & Toyota 3900 10th Ave. S. Great Falls	Automotive repair & body shop	4/14/88	B. Bailey
DeMarois Olds 3115 W. Broadway Missoula	Auto sales & service	4/5/88	J. DeMarois
Frontier Chevrolet 1617 1st Avenue Billings	Auto repair & servicing	4/19/88	C. Rausch
Heberle Ford Frontage Rd. Forsyth	Repair & maintenance	4/18/88	C. Herberle
Joe's Auto & Truck Repair 2808 Grand Ave. Billings	Auto and truck repair-mostly gasoline engines	4/22/88	J. McCoy
Ken Boggs Chevrolet/ Olds Fort Benton	Auto sales & service	4/12/88	K & J Boggs
Palmer & Sons 954 1/2 Meridian Kalispell	Auto, truck & tractor repair	4/7/88	L. Palmer
Ron's Auto Repair 505 Bond Ave. Bozeman	Auto repair	4/21/88	R. Bayramian
T & E Company (Tractor & Equipment) 1835 Harnish Blvd. Billings	Caterpiller dealer, machinery repair	4/19/88	N. Schneider S. Reed

SMALL QUANTITY GENERATOR AUDIT SUMMARY

Facility Name/ Address	Business Type	Date Interviewed	Interviewee
T & J Pro Lube 3542 Harrison Ave. Butte	Lube shop	4/4/88	J. Renz
Ulmer's Truck & Auto Repair 206 7th St. S. Great Falls	Auto & truck repair (no diesels)	4/12/88	I. Haferman
Williams Equipment-Montana E. Missoula	Truck sales & service	4/16/88	A. Jurgens
VEHICLE MAINTENANCE			
Churchill Equipment Churchill Rd. Churchill (Manhattan)	Farm implement sales & service	4/20/88	P. Hoekema
Great Falls City Vehicle Maintenance Shops 25th Ave. N. & 9th St. Great Falls	Repair of city vehicles - police cars, gravel hauling trucks, trash trucks, street cleaners	4/15/88	A. Derks
Davis, Inc. 3201 W. Broadway Missoula	Industrial equipment (logging) sales & service	4/5/88	D. Wark
Glendive Vehicle Maintenance 1810 Utah Ave. Glendive	Vehicle maintenance	4/18/88	M. Ulrich
Great Falls Transit District Great Falls	Bus repairs, washing Owned by City - private management	4/14/88	C. Lankford
Havre City Maintenance Shop 195 12th Ave. W. Havre	Truck, tractors, equipment repair	4/11/88	J. Cook

SMALL QUANTITY GENERATOR AUDIT SUMMARY

Facility Name/ Address	Business Type	Date Interviewed	Interviewee
MET Bus Maintenance Center Monad Rd. Billings	Mass transit & maintenance	4/22/88	D. Larson
Missoula County Airport Broadway Missoula	Vehicle maintenance-trucks, tractors, etc.-no aircraft	4/6/88	J. Seymour
New Holland Equipment 4701 River Drive N. Great Falls	Farm equipment, tractor sales & service	4/15/88	R. Beyer
Powell Co. Vehicle Maintenance Shops Main Street (Fairgrounds) Deer Lodge	Vehicle maintenance	4/4/88	D. Hallingstad
Strong & Bradley 1122 E. Park Livingston	Tractor repair	4/21/88	S. Chappell
Tractor & Equipment Co. Great Falls	Maintenance & repair of heavy equipment & over road trucks	4/15/88	H. Myskewitz
Yellowstone Weed Control Maintenance Shop 342 Bench Blvd. Billings	Maintenance of spraying, mowing equipment	4/22/88	S. Fritz
AUTO BODY			
Brieske Collision Repair 2658 Hwy. 2 East Kalispell	Auto - collision repair	4/7/88	D. Brieske
Hammer'n Hank's Hank Tweeten's Auto Body 120 Main Havre	Auto body & light truck repair & refinishing	4/11/88	H. Tweeton

SMALL QUANTITY GENERATOR AUDIT SUMMARY

Facility Name/ Address	Business Type	Date Interviewed	Interviewee
Hjelm Body & Paint Shop 111 W 13th Helena	Auto body shop	4/13/88	S. Gilreath
Jack's Auto Body 700 N. Seventh Miles City	Auto body shop	4/18/88	J. Fiechtner
Jax Auto Body 2300 W. Palmer Missoula	Auto body & paint shop	4/5/88	K. Koch
Ronan Auto Body - Sales & Service Hwy 93 Ronan	Engine rebuilding-maintenance shop	4/6/88	G. Wunderlich
Ronan Auto Body Hwy. 93 Ronan	Auto body shop	4/6/88	N. Collins
Ron's Auto Refinishing 919 Strand Ave. Missoula	Body paint, frame, collision repair	4/5/88	K. Little
Wade's Auto Body Bond Bozeman	Auto body	4/20/88	R. Pestel
AIRCRAFT MAINTENANCE			
Empire Aviation (FOB) Missoula Airport Missoula	Aircraft maintenance	4/6/88	R. Stiengas
Holman Aviation P.O. Box 2228 Great Falls	Aircraft service & maintenance-primarily line service, very little maintenance	4/15/88	K. Redovich
Rocky Mountain Air International Airport Great Falls	Maintenance & refueling-certified	4/15/88	H. Noble B. Mader

SMALL QUANTITY GENERATOR AUDIT SUMMARY

Facility Name/ Address	Business Type	Date Interviewed	Interviewee
PRINTERS			
Artcraft Printers 150 E. Spruce Missoula	Commercial printing	4/5/88	M. Peissig
Bozeman Chronicle 32 S. Rouse Bozeman	Newspaper printing	4/20/88	B. Smith
Great Falls Tribune Great Falls	Newspaper print publishing-black & white & color	4/14/88	L. King R. Craff
Havre Daily News 119 2nd Havre	Newspaper printing	4/11/88	D. Pfeifer
Headline Graphics 1702 1st Ave. N. Billings	Printing/graphics	4/21/88	R. McMenemy
Northwest Publishing 393 N. Main Kalispell	Film developing for image papers	4/7/88	M. Markowitz
Printers, Inc. 846 Front Helena	Printing-color & black & white	4/13/88	R. Bell
Rocky Mountain 221 S. B St. Livingston	Commercial printing	4/21/88	L. Goosey
State of Montana Publications & Graphics 920 Front St. Helena	Print shop divisions: typography, camera room, print shop	4/13/88	L. LaSalle
PHOTO LABS			
Bozeman Imaging Service 915 Highlander Bozeman	Radiology lab-medical x-rays	4/20/88	T. Young

SMALL QUANTITY GENERATOR AUDIT SUMMARY

Facility Name/ Address	Business Type	Date Interviewed	Interviewee
Express Photo Lab 321 E. Main, 2-G Bozeman	Photo lab	4/20/88	J. Spady
Highway Dept. Photo Lab Highway Bldg. Helena	Color photo processing-black & white processing	4/13/88	R. Shibley
Jon Schulman 135 E. Main Missoula	Photo processing	4/5/88	J. Schulman
Kasper's Photo Shop, Inc. 1116 Central Ave. Billings	Photo processing	4/19/88	S. Kasper
Rainbow One Hour Photo 3333 Harrison Butte	Photo processing	4/4/88	T. DiFronzo
METAL FINISHING/ FABRICATING			
All American Bumper & Plating 2425 Mary Missoula	Electroplating	4/5/88	D. Hirning
Empire Steel Mfg. Co. 501 N. 18th Ave. Billings	Structural steel fabrication	4/18/88	T. Breen
Northwest Plating Charles St. Billings	Hard chrome plating & engine rebuilding	4/19/88	D. Johnson
Transport, Inc. 1430 Lockwood Rd. Billings	Metal fabrication & repair	4/21/88	G. Weyerman
Western Iron Works 1400 E. 2nd St. Butte	Metal fabrication/ machine shop	4/4/88	M. Greene

SMALL QUANTITY GENERATOR AUDIT SUMMARY

Facility Name/ Address	Business Type	Date Interviewed	Interviewee
Yellowstone Stoves Route 85 Livington	Wood stove manufacturing	4/21/88	D. Brousseau
DRY CLEANERS			
Big Sky Highlander Dry Cleaners 601 15th Street N. Great Falls	Coin laundry & dry cleaning	4/15/88	B. Dew
Big Sky Linen Supply 715 Central Ave. Billings	Dry cleaning, laundry	4/19/88	J. Driscoll B. Ruff
Gallatin Laundry 137 E. Babcock Bozeman	Dry cleaner & laundry	4/20/88	T. O'Connell
Havre Laundry & Dry Cleaning Co. 34 1st St. Havre	Dry cleaning-industrial cleaning	4/11/88	N. Brenna
Missoula Textile Services 111 E. Spruce Missoula	Dry cleaning, linen supply, commerical laundry	4/5/88	H. Topel
Montana Cleaners, Inc.	Dry cleaning-apparel	4/14/88	A. Dalson
Roda's Cleaners 1212 Grand Billings	Dry cleaner	4/19/88	P. Morse
TJ Linen Supply Hwy 93 South Whitefish	Industrial dry cleaner	4/8/88	J. Schend
AERIAL APPLICATORS			
Don's Aero Spray Dawson County Airport	Agricultural spraying/ pesticides	4/18/88	B. Horwick
G & R Air Spray Geraldine Airport	Aerial spraying	4/12/88	M. Gardner R. Roland

SMALL QUANTITY GENERATOR AUDIT SUMMARY

Facility Name/ Address	Business Type	Date Interviewed	Interviewee
Hensley Flying Service Havre Airport Havre	Aerial applicator, sell aviation fuels,	4/12/88	J. Stroh
Solomon & Johnson Aerial Spraying Havre Airport Havre	Aerial applicator	4/12/88	T. Solomon
Triangle Aviation Big Sand Airport Big Sandy	Aerial applicator	4/12/88	W. Turner
ELEVATORS & CO-OPS			
Cargill Box 208 Hingham	Clean & treat seed	4/11/88	M. Warren
Evans Grain & Elevator 3rd Ave. N.W. Great Falls	Grain elevator	4/14/88	J. Smith
Hageman Elevator 210 W. Main Laurel	Grain elevator	4/21/88	K. G. Hageman
Harvest States Elevator Fallon	Grain storage	4/18/88	W. Koenig
Peavey Grain Elevator 512 N. Seventh Miles City	Grain elevator	4/18/88	T. Linda
Union Elevator Box 118 Galata	Grain elevator	4/11/88	C. Mellinger

SMALL QUANTITY GENERATOR AUDIT SUMMARY

Facility Name/ Address	Business Type	Date Interviewed	Interviewee
WEED CONTROL DISTRICTS			
Cascade Co. Weed Control District 521 1st Ave. N.W. Great Falls	Weed control (roadside), mosquito control, some private contracting	4/14/88	Kitty
Park County Weed Control 414 E. Calendar Livingston	Spraying for weed control	4/21/88	C. Williams
Powell Co. Weed District 409 Missouri (Court House) Deer Lodge	Weed control on road-right-of-way, airport, landfills	4/4/88	E. Brubaker
Yellowstone County Week District 347 Bench Blvd. Billings	Weed spraying	4/22/88	S. Fritz
FURNITURE REFINISHING			
Rocky Mountain Furniture Restoration 103 Commercial Drive Bozeman	Furniture restoration/ refinishing	4/20/88	S. Parker
Village Decorating, Inc. 701 13th St. S. Great Falls	Furniture refinishing	4/15/88	V. Flesch
Windmill Furniture Stripping 80789 Gallatin Rd. Bozeman	Furniture refinishing	4/21/88	N/A

APPENDIX C

SUMMARY LIST OF HAZARDOUS WASTE SERVICES AND USED OIL HAULERS CONTACTED

A & B. Used Service
440 Hillview Ave.
Billings, MT 59101
Mickey Anderson (406) 245-5745

American Environmental Management
11855 White Rock Rd.
Rancho Cordova, CA 95670
Bruce Risley (916) 985-6666

BFI, Inc.
P. O. Box 5416
Lake Charles, LA 70606
Austin Arabie or
Ben Twiner (318) 527-6857

Chemical Processors, Inc.
2203 Airport Way So.
Seattle, WA 98134
Susan Mosher (206) 223-0500

Chemical Rainbow Transport Tank Cleaners
2119 Wilmington
Long Beach, CA
(213) 835-0151

Chem-Waste Management
200 S.W. Market St., Suite 925
Portland, OR 97201
Cheryl Noon (503) 223-1912

Crosby & Overton, Inc.
P. O. Box 1085
Kent, WA 98032
Dick Lee (206) 872-8030

Envirosafe Services of Idaho (ESI)
P. O. Box 417
Boise, ID 83701
Joseph McNeal (208) 384-1500

H & M Oil Company
1272 Lilac
Pocatello, ID 83201
Wilma Benintendi (208) 237-5920
(208) 232-0498 (800) 247-4290

Hi-Ball Trucking
P. O. Box 1117
Billings, MT 59103
(406) 245-3026

Marine Shale
110 James Dr. W., Suite 120
St. Rose, LA 70087
Jack Mount (800) 872-6774

Montana Oil Service
P. O. Box 2903
Great Falls, MT 59403
Nora Bessler (406) 761-4503

MT Chamber of Commerce/
Industrial Waste Exchange
P. O. Box 1730
Helena, MT 59624
Don Ingels (406) 442-2405

North American Environmental, Inc.
2432 E. 11th St.
Tacoma, WA 98421
Deanna McKenna (206) 272-9988

Olymus Environmental, Inc.
1660 B. St.
Helena, MT 59601
Kris Kok (406) 443-3087

Pegasus Waste Management
30250 S.W. Parkway Ave.
Wilsonville, OR 97070
Eric Hopkins (503) 682-5802

Petroleum Reclaiming Service
3003 Taylor Way
Tacoma, WA 98421
Bob Moody (206) 383-4474

Reidel Environmental Services
P. O. Box 5004
Portland, OR 97201
Jim Vole (800) 334-0004

Rollins Environmental Services
P. O. Box 609
Deer Park, TX 77536
Cheryl Williams (713) 479-6001

Safety Kleen
777 Big Timber Rd.
Elgine, IL 60123
Roxanne Tovar (800) 323-5740

SCA Chemical Services
111700 Stony Island
Chicago, IL 60617
Sharon Pilashowski (312) 646-5700

Sierra Chemical Co.
1490 E. Second St.
Reno, NV 89502
Tom Wright (701) 786-7777

Special Resource Management
P. O. Box 4168
Butte, MT 59702
Dave Nation (406) 782-4201

Trade Waste Incineration
7 Mobile Ave.
Sawget, IL
Pat Sanngross or
Dennis Warshol (312) 572-3095

U.S. Ecology
Box 578
Beatty, NV 89003
Joe French or (702) 553-2203
Jerry Raque (800) 626-5334

U.S. Pollution Control
8960 N. Hwy. 40
Lake Point, UT 84074
Bob Madsen (801) 252-2000

U.S. Pollution Control, Inc.
2000 Classen, Suite 320
Oklahoma City, OK 73106
Ginger Brinlee (405) 528-8371

Waggoners Trucking
Box 31357
Billings, MT 59107
(406) 248-1919

Washington Chemical
P. O. Box 743
Spokane, WA 99210
Don Harron, Pres. (509) 489-9176

Western Compliance
P. O. Box 338
Tualatin, OR 97062
Gene Tienken (503) 682-2341

Williams Strategic Metals
4891 Independence, Suite 130
Wheat Ridge, CO 80033
Richard Daniel (303) 431-4470

Zero Waste System
2828 Poplar St.
Oakland, CA 94608
Claudette Altamirano (415) 893-8257